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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,390	10/29/2003	Sang-Hyuck Ha	45982	6829
7590	08/12/2008		EXAMINER	
Peter L. Kendall Roylance, Abrams, Berdo & Goodman, L.L.P. Suite 600 1300 19th Street, N.W. Washington, DC 20036			TORRES, JOSEPH D	
		ART UNIT	PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/695,390	HA ET AL.	
	Examiner	Art Unit	
	Joseph D. Torres	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 26 June 2008.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-16,33 and 34 is/are pending in the application.
 4a) Of the above claim(s) 20-32 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-16,33 and 34 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 28 May 2008 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Election/Restrictions

Claims 20-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 01/30/2008.

This application contains claims 20-32 drawn to an invention nonelected with traverse in the reply filed on 01/30/2008. **A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.**

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
The clause regarding "willful false statements ..." required by 37 CFR 1.68 has been omitted.

Drawings

The drawings were received on 05/28/2008. These drawings are accepted.

Response to Arguments

Applicant's arguments filed 06/26/2008 have been fully considered but they are not persuasive.

The Applicant contends, "The Examiner rejected claims 1-19 under 35 U.S.C. §112, second paragraph as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. Claim 1 has been amended to recite "in consideration of a column formed with the remainder". Applicants believe the step of calculating an address compensation factor is now clear especially in view of the specification".

The Examiner disagrees and asserts that it is still not clear how considering a column formed with the remainder translates to a positive limitation nor does it better define the relationship between "calculating an address compensation factor" and "the remainder" is unspecified and indefinite.

The Applicant contends, "Claims 2 and 3 have been amended to more clearly recite the step of generating an interim address. Applicants believe the claim language in view of the amendment to claim 1 now clearly recites the step of excluding or including the last column with respect to generating an interim address. The recited steps are exemplified as described in detail in the specification on page 15 lines 20-29. As per claim 3, the claim language now renders the step of increasing or decreasing the address compensation factor more easily understood, especially in view of the specification.

Detailed descriptions of these steps are exemplified in the specification on page 16 lines 4-12".

The Examiner disagrees and asserts that it is still not clear how the interim address generation step of claims 2 and 3 relates to generating an interim address by bit reversal order (BRO) operation. That is, what does "excluding the last column" and "including the last column" have to do with "generating an interim address by bit reversal order (BRO) operation" [Emphasis added].

The Applicant contends, "The Examiner rejects claims 1-19 under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter, specifically as being directed to an abstract mathematical algorithm. The Applicants respectfully disagree. The preamble cites "a method for reading code symbols" and the steps describe a method for generating a read address and reading the code symbol written in the generated read address. Thus, the claim clearly recites function and utility and is not merely directed to a mathematical algorithm. The Examiner states the claim as written "attempts to gain a patent on every substantial practical application of an abstract mathematical algorithm/idea." The claim language is specifically directed to a method of reading code symbols from an encoded packet received in a mobile communications system. The method comprises specific steps for generating the read address for reading the code symbols. The claim language does not read exclusively on a mathematical algorithm. Conversely, the claim language is clearly directed to a new

and useful process for reading code symbols by deinterleaving. Applicants respectfully request withdrawal of rejections to claims 1-19 under 35 U.S.C. §101".

The Examiner disagrees and asserts that regardless of the intended use, the algorithm presented in claims 1-16, 33 and 34 is explicitly taught as and directed to a method for rearranging data by retrieving/reading data from a matrix/array/memory in a particular order.

The Applicant contends, "Thus, at the least, Kim fails to discuss calculating an address compensation factor for compensating the interim address in consideration of a column formed with the remainder R, and generating a read address by adding the interim address and the address compensation factor. Applicant respectfully disagrees that Kim anticipates claim 1".

The Examiner disagrees and asserts $\text{BRO}(K/J) + (2^m(K \bmod J))$ on page 3 of Kim is a read address calculated by adding the interim address ($\text{BRO}(K/J)$) to the address compensation factor ($2^m(K \bmod J)$) for the code symbol.

The Applicant contends, "The Examiner rejects claim 1 on the grounds of non-statutory double patenting over claim 1 of US Patent 6668350 B1 to Kim. Applicant respectfully traverses this rejection. In view of the Arguments above, Kim fails to disclose at least the steps of calculating an address compensation factor for compensating the interim address in consideration of a column formed with the remainder R, and generating a read address by adding the interim address and the address compensation factor, nor

are the recited steps obvious in view of 6668350. Because Kim fails to describe or suggest at least these recited features, there is no basis for a double patenting rejection. Applicant respectfully requests the Examiner withdraw the nonstatutory double patenting rejection of claim 1".

The Examiner disagrees and asserts $\text{BRO}(K/J) + (2^m(K \bmod J)$ on page 3 of Kim is a read address calculated by adding the interim address ($\text{BRO}(K/J)$) to the address compensation factor ($2^m(K \bmod J)$) for the code symbol.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16, 33 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01.

As per claim 1: Claim 1 recites, "calculating an address compensation factor for compensating the interim address in consideration of the remainder" [Emphasis added]. The relationship between "calculating an address compensation factor" and "a column formed with the remainder R" is unspecified and indefinite. The Examiner asserts that it is still not clear how considering a column formed with the remainder translates to a positive limitation nor does it better define the relationship between "calculating an address compensation factor" and "the remainder" is unspecified and indefinite.

As per claims 2 and 3: Claim 1 recites, “generating an interim address by bit reversal order (BRO) operation on an index of a code symbol”. The relationship between generating an interim address by bit reversal order (BRO) operation and the interim address generation step of claims 2 and 3 is not clear. That is, what does “excluding the last column” and “including the last column” have to do with “generating an interim address by **bit reversal order (BRO) operation**” [Emphasis added]. **The Examiner asserts that it is still not clear how the interim address generation step of claims 2 and 3 relates to generating an interim address by bit reversal order (BRO) operation.**

As per claim 3: Claim 1 recites, “calculating an address compensation factor for compensating the interim address in consideration of the remainder”. The relationship between calculating an address compensation factor for compensating the interim address in consideration of the remainder and address compensation factor calculation step of claim 3 is not clear. That is, what does “increasing the address compensation factor by one...” and “decreasing the address compensation factor by one...” have to do with “calculating an address compensation factor for compensating the interim address **in consideration of the remainder**” [Emphasis added].

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-16, 33 and 34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1 recites, “A method for reading code symbols” in the preamble.

The limitations in claim 1 are directed to an abstract mathematical algorithm of generating an abstract binary address number value intended for use in a abstract method for reading data intended for use in implementing an abstract algorithm for rearranging data.

The Examiner asserts that regardless of the intended use, the algorithm presented in claims 1-16, 33 and 34 is explicitly taught as and directed to a method for rearranging data by retrieving/reading data from a matrix/array/memory in a particular order.

The claims as written attempt to gain a patent on every “substantial practical application” of an abstract mathematical algorithm/idea.

The courts have also held that a claim may not preempt< ideas, laws of nature or natural phenomena. The concern over preemption was expressed as early as 1852. See Le Roy v. Tatham, 55 U.S. 156, 175 (1852) (“A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.”); Funk Brothers Seed Co. v. Kalo Inoculant Co., 333 U.S. 127, 132, 76 USPQ 280, 282 (1948) (combination of six species of bacteria held to be nonstatutory subject matter).

**>Accordingly, one may not patent every “substantial practical application” of an idea, law of nature or natural phenomena because such a patent would “in practical effect be

a patent on the [idea, law of nature or natural phenomena] itself." *Gottschalk v. Benson*, 409 U.S. 63, 71-72, 175 USPQ 673, 676 (1972).

Simply put, claims that describe features in the Applicant's specification at the Abstract level without any regard to function or utility are nonstatutory.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, are rejected under 35 U.S.C. 102(b) as being anticipated by KIM M et al. (WO 0035102 A 1, hereafter referred to as Kim).

35 U.S.C. 102(b) rejection of claim 1.

Kim clearly suggests generating an interim address by bit reversal order, BRO, operation on an index of a code symbol (BRO(K/J) on page 3 of Kim is an interim address of a bit reversal order, BRO, operation on an index of a code symbol); calculating an address compensation factor for compensating the interim address in consideration of the remainder ($2^m(K \bmod J)$ on page 3 of Kim is an address compensation factor for compensating the interim address in consideration of the remainder $K \bmod J$); and generating a read address by adding the interim address to the address compensation factor for the code symbol (BRO(K/J) + ($2^m(K \bmod J)$ on

page 3 of Kim is a read address calculated by adding the interim address (BRO(K/J) to the address compensation factor ($2^m(K \bmod J)$ for the code symbol), and reading the code symbol written in the generated read address (Figure 2 of Kim).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is rejected on the ground of nonstatutory double patenting over claim 1 of U. S. Patent No. US 6668350 B1 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: claim 1 of U. S. Patent No. US 6668350 B1 clearly suggests generating an interim address by bit reversal order, BRO, operation on an

index of a code symbol (BRO(K/J) is an interim address of a bit reversal order, BRO, operation on an index of a code symbol); calculating an address compensation factor for compensating the interim address in consideration of the remainder ($2^m(K \bmod J)$ is an address compensation factor for compensating the interim address in consideration of the remainder $K \bmod J$); and generating a read address by adding the interim address to the address compensation factor for the code symbol ($BRO(K/J) + (2^m(K \bmod J))$ is a read address calculated by adding the interim address ($BRO(K/J)$ to the address compensation factor ($2^m(K \bmod J)$ for the code symbol).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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